

ITW / AF \$

PATENT APPLICATION  
PO-7926  
MD-99-44

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICATION OF )  
RICHARD R. ROESLER ET AL ) EXAMINING GROUP NO.: 1711  
SERIAL NUMBER: 10/678,782 ) CONFIRMATION NO.: 3887  
FILED: OCTOBER 3, 2003 ) EXAMINER: DUC TRUONG  
TITLE: PROCESS FOR )  
PREPARING ASPARTATES )

**LETTER**

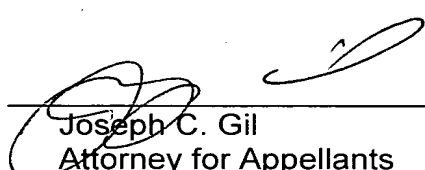
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 2231-1450

Sir:

Enclosed is an Appeal Brief in the matter of the subject Appeal. Please charge the fee for filing the Brief, \$500.00, to our Deposit Account Number 13-3848. Triplicate copies of this paper are enclosed.

Respectfully submitted

By

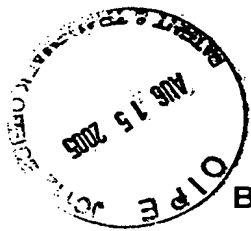
  
Joseph C. Gil  
Attorney for Appellants  
Reg. No. 26,602

Bayer MaterialScience LLC  
100 Bayer Road  
Pittsburgh, PA 15205-9741  
Phone: (412) 777-3813  
FACSIMILE PHONE NUMBER:  
(412) 777-3902

f:\shared\kpl\jcg63.abl

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an enveloped addressed to: Commissioner for Patents, Alexandria, VA 22313-1450 August 11, 2005

\_\_\_\_\_  
Date  
Joseph C. Gil, Reg. No. 26,602  
\_\_\_\_\_  
Name of applicant, assignee or Registered Representative  
\_\_\_\_\_  
Signature  
August 11, 2005  
\_\_\_\_\_  
Date



PATENT APPLICATION  
PO-7926  
MD-99-44

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

APPLICATION OF	)
	)
RICHARD R. ROESLER ET AL	) EXAMINING GROUP NO: 1711
	)
SERIAL NUMBER: 10/678,782	) CONFIRMATION NO.: 3887
	)
FILED: OCTOBER 3, 2003	) EXAMINER: DUC TRUONG
	)
TITLE: PROCESS FOR	)
PREPARING ASPARTATES	)

**MAIL STOP APPEAL BRIEF – PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**ON APPEAL FROM THE PRIMARY EXAMINER TO THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

**APPELLANT'S BRIEF UNDER 37 C.F.R. § 1.192**

Sir:

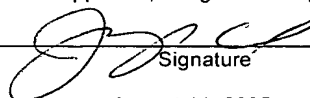
The present Appeal Brief is submitted in support of the Notice of Appeal filed  
June 16, 2005.

I hereby certify that this correspondence is being deposited  
with the United States Postal Service as first class mail in an  
envelope addressed to: Commissioner for Patents,  
Alexandria, VA 22313-1450 August 11, 2005

Date

Joseph C. Gil, Reg. No. 26,602

Name of applicant, assignee or Registered Representative



Signature

August 11, 2005

Date

08/16/2005 MAHMED1 00000022 133848 10678782  
01 FC:1402 500.00 DA

I

**REAL PARTY IN INTEREST**

The real party in interest for the application in this Appeal is assignee Bayer Polymers LLC, by virtue of the Assignment dated August 22 and August 27, 2003, recorded at Reel/Frame 014590/0179 on October 3, 2003 in the United States Patent and Trademark Office.

II

**RELATED APPEALS AND INTERFERENCES**

As the legal representative of Appellants, the undersigned attorney has no knowledge of any appeals or interferences directly related to this Appeal.

III

**STATUS OF CLAIMS**

Claims 1-4 of this patent application are pending. Claims 1-4 were finally rejected under 35 U.S.C. §103(a) in an Office Action mailed December 22, 2004 ("Final Office Action"), an Advisory Action mailed February 17, 2005 ("First Advisory Action") and an Advisory Action mailed June 3, 2005 ("Second Advisory Action").

Four pending claims, Claims 1-4, are at issue in this Appeal. Claims 1 and 2 are independently patentable. Claims 3 and 4 stand or fall with Claim 1.

IV

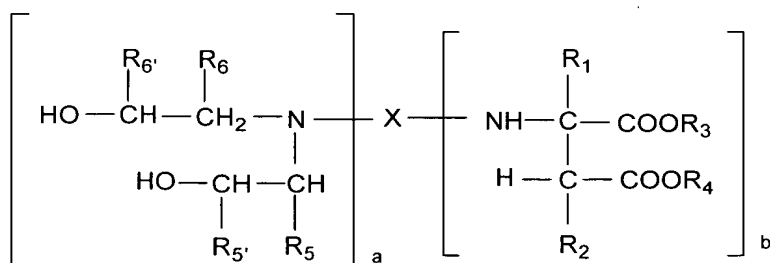
**STATUS OF AMENDMENTS**

No claims were amended after final rejection. A copy of the claims involved in this Appeal is contained in the Appendix attached hereto.

# V

## SUMMARY OF CLAIMED SUBJECT MATTER

In one embodiment set forth in Claim 1, Appellants have discovered an aspartate of the formula:



where

X represents an m-valent organic residue obtained by removing the primary amino group or groups from a mono or polyamine which has (cyclo)aliphatically bound amino groups and a number average molecular weight of 60 to 6000, and which may contain further functional groups that either are reactive with isocyanate groups or are inert to isocyanate groups at temperatures of up to 100°C,

R<sub>1</sub> and R<sub>2</sub> may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>3</sub> and R<sub>4</sub> may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>5</sub> represents hydrogen or together with R<sub>5'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>5'</sub> represents a moiety selected from the group consisting of  
i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three  
alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub>  
cycloalkyl groups, which may be substituted with up to three alkyl  
groups having from 1 to 3 carbon atoms,

R<sub>6</sub> represents hydrogen or together with R<sub>6'</sub> and the carbon atoms to  
which they are connected forms a six-membered cycloalkyl group, with  
said cycloalkyl group being substituted with from 0 to 3 alkyl groups  
having from 1 to 3 carbon atoms,

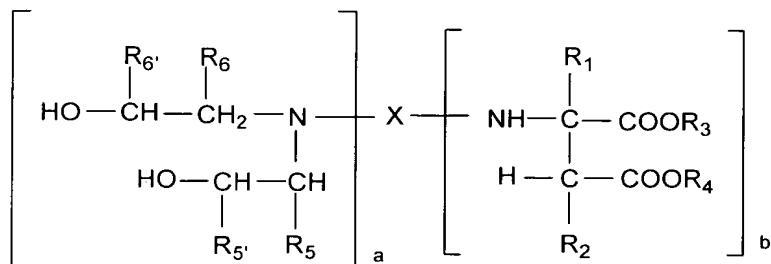
R<sub>6'</sub> represents a moiety selected from the group consisting of  
i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three  
alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub>  
cycloalkyl groups, which may be substituted with up to three alkyl  
groups having from 1 to 3 carbon atoms,

with the proviso that R<sub>5</sub> and R<sub>6</sub> are the same and R<sub>5'</sub> and R<sub>6'</sub> are the same,  
and

a and b represent integers of from 1 to 5, provided that the sum of a and b is  
from 2 to 6.

See original Claim 1 and page 3, line 12 to page 5, line 4 of the specification.

In one embodiment set forth in Claim 2, Appellants have discovered a process for preparing an asparatate of the formula:



where

X represents an m-valent organic residue obtained by removing the primary amino group or groups from a mono or polyamine which has (cyclo)aliphatically bound amino groups and a number average molecular weight of 60 to 6000, and which may contain further functional groups that either are reactive with isocyanate groups or are inert to isocyanate groups at temperatures of up to 100°C,

R<sub>1</sub> and R<sub>2</sub> may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>3</sub> and R<sub>4</sub> may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>5</sub> represents hydrogen or together with R<sub>5'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>5'</sub> represents a moiety selected from the group consisting of  
 i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
 ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three

alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub> cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,

R<sub>6</sub> represents hydrogen or together with R<sub>6'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>6'</sub> represents a moiety selected from the group consisting of  
i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub> cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,

with the proviso that R<sub>5</sub> and R<sub>6</sub> are the same and R<sub>5'</sub> and R<sub>6'</sub> are the same, and

a and b represent integers of from 1 to 5, provided that the sum of a and b is from 2 to 6, comprising

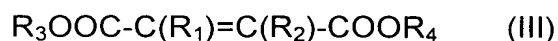
A) reacting at a temperature of 0 to 100°C, in solution or in the absence of a solvent and at an equivalent ratio of primary amino groups in component a) to C=C double bonds in component b) of from about 1.1:1 to about 3.0:1

a) mono or polyamines corresponding to formula (II)



with

b) compounds corresponding to formula (III)



wherein

X, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are as defined above and  
m represents an integer of from 2 to 6, and

- B) reacting the resultant product with an oxirane compound selected from the group consisting of alkylene oxides, cycloalkylene oxides, and phenylglycidyl ether.

See original Claim 2 and specification at page 5, lines 6-28.

The aspartates of the present invention may be used directly after completion of the synthesis process because, in contrast to prior art aspartates, an approximately complete degree of conversion is achieved. The aspartates of the present invention are toxicologically and physiologically harmless and exhibit a reasonable, rather than vigorous, reactivity towards isocyanates. Due to their low viscosity they are a suitable alternative to environmentally polluting organic solvents previously used and may therefore be used in high-quality low-solvent (or solvent free) two-component coating compositions.

## VI

### GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Has a Prima Facie Case of Obviousness Under 35 U.S.C. §103(a) over U.S. 5,243,012 to Wicks et al. ("Wicks"), U.S. 5,236,741 to Zwiener et al. ("Zwiener '741"), or U.S. 5,126,170 to Zwiener et al. ("Zwiener '170) Been Established?

## VII

### ARGUMENT

The Required Prima Facie Case of Obviousness under 35 U.S.C. §103(a) over Wicks, Zwiener '741 or Zwiener '170 Has Not Been Established.



**A. The Rejection**

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being obvious over 5,243,012 to Wicks et al., U.S. 5,236,741 to Zwiener et al. or U.S. 5,126,170 to Zwiener et al.

The reasons for rejection are set forth in the Office Action of August 25, 2004 ("Office Action"), the Final Office Action, the First Advisory Action and the Second Advisory Action, summarized as follows:

In the Office Action it is alleged that Wicks, Zwiener '741 and Zwiener '170 disclose a polyurea or polyurethane coating comprising at least one compound of the formula (I) by reacting primary amines of the formula (II) with maleic or fumaric acid esters of the formula (III) (as those formulas are set forth in the references). It is further alleged that the three references disclose the coating composition comprising a polyisocyanate and said compound [of Formula I] to form a binder, polyurethane and polyurea coatings. (Office Action at pages 2-3).

It is acknowledged in the Office Action that the disclosures of the references differ from the instant claims in that they do not disclose the claimed formula derived from the reaction products of primary amines with maleic or fumaric acid esters then with an oxirane compound comprising alkylene oxide. It is nevertheless asserted that the references do disclose the reaction products of primary polyamines with maleic or fumaric acid esters under the same conditions. The references are said to further disclose the use of polyether polyols in the preparation of prepolymers and semi-prepolymers, and preparation of polyether polyols by the alkoxylation of starting materials comprising alkylene oxide such as ethylene and/or propylene oxide, which may be introduced into the alkoxylation in any sequence or as a mixture (Office Action at page 3).

It is asserted to be obvious to one of ordinary skill in the art to react the reaction product of primary polyamines with maleic or fumaric acid esters then with alkylene oxide to form the claimed aspartate of the claimed formula since the references clearly disclose that the alkylene oxide can be added in any sequence, in the absence of a showing of unexpected results (Office Action at page 3).

In the Final Office Action Appellant's arguments filed on November 24, 2004 were characterized as not persuasive. The reasons for the final rejection were stated as follows:

It is noted that the aspartate of the claimed formula is derived from the process of Claim 2. The reference is said to disclose the required reactants and the process conditions in the claimed step A (as stated in the previous Office Action) (Final Office Action at page 2). Appellant's arguments are characterized as based on the claimed step B, in that the polyhydroxy compounds of the references are used to make isocyanate group containing prepolymers with polyisocyanates. It is alleged that the arguments are incorrect since the references disclose

"polyether polyols are obtained by the alkoxylation of suitable starting materials and are suitable for the preparation of the isocyanate group containing prepolymers and semi-prepolymers. Examples of suitable starting molecules for the polyether polyols include monomeric polyols, water organic amines having at least two NH bonds and mixtures of these starting molecules. Ethylene oxide and propylene oxide are suitable alkylene oxides for the alkoxylation reaction. These alkylene oxides may be introduced into the alkoxylation reaction in any sequence or as a mixture",

citing column 4, lines 29-41 of Wicks; column 3, line 60 – column 4, line 4 of '471; and column 3, lines 53-65 of '170 (Final Office Action at pages 2-3).

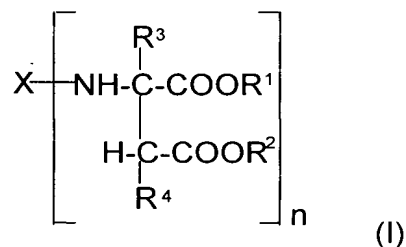
It is asserted to be "clear to see" from the references that the alkylene oxides are used for starting materials other than isocyanate group containing prepolymers and can react with a mixture in any sequence such as after the reaction of the claimed step A. Therefore, the claimed aspartate is alleged to be inherent in the prior art with the claimed definitions of each variation. Appellant's arguments were characterized as based on the characteristics of the variations in the claimed formula but were not persuasive (Final Office Action at page 3).

A response submitted after final rejection on February 1, 2005 was deemed not to place the application in condition for allowance for the reasons stated in the First Advisory Action: Appellant's arguments are characterized as based on differences between the claimed chemical structure and the prior art, whereas the Examiner's arguments are based on the mechanism to form the products of the

claimed formula. The references are asserted to disclose the product which is the intermediate product from the claimed step A before reacting with an oxirane in step B to form the product of the claimed formula, and to "clearly" disclose the same reactants under the same conditions with the claimed process then with alkylene oxides. These reasons are repeated in the Second Advisory Action.

## B. The Prior Art

Wicks, Zwiener '170 and Zwiener '741 all disclose compositions for the preparation of a polyurea or polyurethane coating which contain a) a polyisocyanate component and b) at least one compound generally corresponding to the Formula I,



as defined more fully in those patents.

### Component (a), the polyisocyanate component:

As described in all three references, and using Wicks as an example, the polyisocyanate component can be prepared from known monomeric polyisocyanates (column 2, lines 47 et seq.); derivatives of monomeric polyisocyanates such as polyisocyanates containing biuret, uretdione, oxadiazinetriene, urethane, allophanate and isocyanurate groups (column 3, lines 6-33); polyisocyanates containing poly(oxyalkylene) chains, prepared by reacting any of the above polyisocyanates with monofunctional alcohols containing oxyalkylene chains (column 3, lines 34-42); and isocyanate-group containing prepolymers and semi-prepolymers which are prepared from the monomeric polyisocyanates or polyisocyanate adducts described previously and organic polyhydroxyl compounds (column 3, lines 48-52).

As described in Wicks at column 4, lines 5 et seq., the prepolymers and semi-prepolymers are preferably prepared from relatively high molecular weight

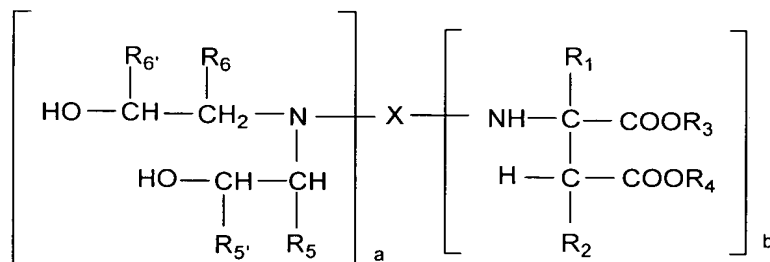
polyhydroxyl compounds. Suitable polyhydroxyl compounds include polyester polyols (column 4, line 18) and polyether polyols (column 4, line 29). Polyether polyols are obtained in a known manner from alkoxylation of suitable starting materials (column 4, line 29), which include monomeric polyols, water, organic polyamines, and ethylene oxide and/or propylene oxide (column 4, line 37). The alkylene oxides may be introduced into the alkoxylation reaction in any sequence or as a mixture (column 4, lines 39-40).

Component (b), the aspartate

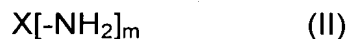
Component b, compounds of Formula I in Wicks, Zwiener '741 and Zwiener '170, are prepared in a known manner (Wicks at column 5, line 7) by reacting primary polyamines (column 5, line 11) with optionally substituted maleic or fumaric acid esters (column 5, line 14). The method of synthesizing compounds of Formula I is further described in Wicks at column 5, lines 48-58, which states that preparation may be carried out at a temperature of 0-100°C, using the starting materials in such proportions such that at least one olefinic double bond is present for each primary amino group. Excess starting materials may be removed by distillation after the reaction, which may be carried out solvent-free or in the presence of a suitable organic solvent.

**C. The Required Prima Facie Case of Obviousness Under 35 U.S.C. § 103 Has Not Been Established**

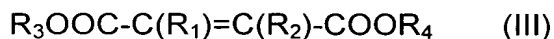
The present invention is generally directed to aspartates of the formula:



as defined more fully in the application and Claim 1. The aspartates of the present invention are prepared by reacting mono or polyamines corresponding to formula (II)

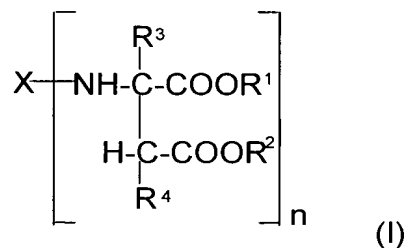


with compounds corresponding to formula (III)



and reacting the resultant product with an oxirane compound selected from the group consisting of alkylene oxides, cycloalkylene oxides, and phenylglycidyl ether.

Wicks, Zwiener '170 and Zwiener '741 all disclose compositions for the preparation of a polyurea coating which contain a) a polyisocyanate component and b) at least one compound generally corresponding to the Formula I,



as defined more fully in those patents. There is absolutely no disclosure in any of the three references of any further processing steps of compounds of Formula I that result in the claimed compounds. Appellants do not dispute the Examiner's assertion that the "X-aspartate" portion of the molecules shown in Claim 1 are shown in Wicks, Zwiener '170 and Zwiener '741, and that the method of making this portion of the compounds claimed is generally as described in the cited patents.

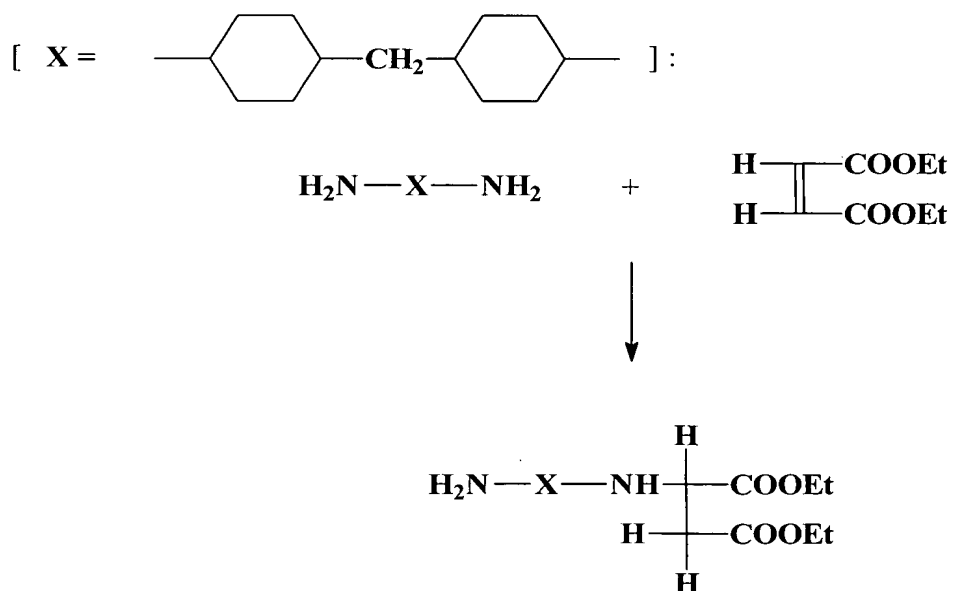
It is asserted in the Final Office Action that the alkylene oxides are used for starting materials other than isocyanate group containing prepolymers, and that alkylene oxides can react with a mixture in any sequence such as after the reaction of the claimed step A. Appellants disagree with this characterization of the references. There is simply no disclosure in any of the cited references that

supports this assertion. The only relevant portion of any of the references is the portion which describes the use of alkylene oxides in the preparation of the prepolymer, noted previously and found at column 4, lines 39-40 in Wicks, and states only that the alkylene oxides can be added in any sequence during the alkoxylation reaction which takes place during preparation of the polyether polyol.

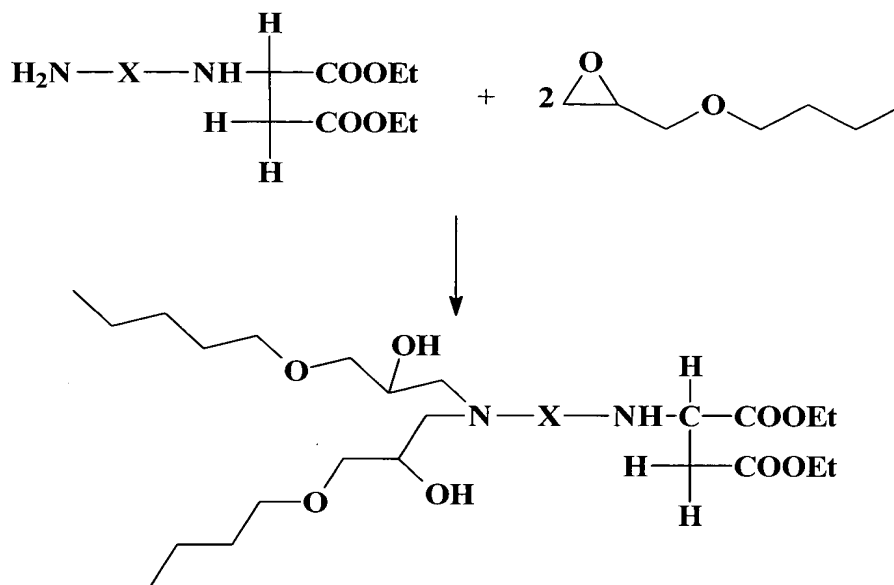
It is also asserted in the Office Action, the Final Office Action and the First and Second Advisory Actions that the compounds of Claim 1 are somehow inherently formed in the compositions disclosed in the three patents, as the patents are asserted to show "the same reactants under the same conditions as the claimed process then with alkylene oxides... etc". Appellants respectfully submit that the claimed compounds are not inherently formed or disclosed in any of the patents cited above, nor is the process of making these compounds disclosed, for the following reasons.

In the present invention, in the first example, propylene oxide adduct of amino-aspartate is reacted with isocyanate functional isocyanurate based on hexamethylene diisocyanate. The preferred diamine is hexamethylene diamine; while the preferred maleate is diethyl maleate.

The first step is the preparation of the monoaspartate

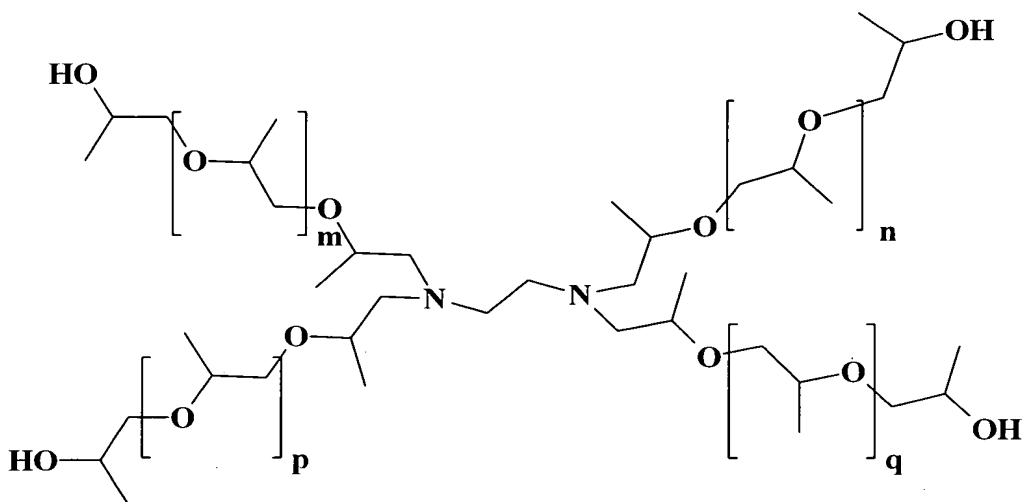


The second step is the conversion of the primary amine into a bis-ethanol amine by use of butyl glycidyl ether:

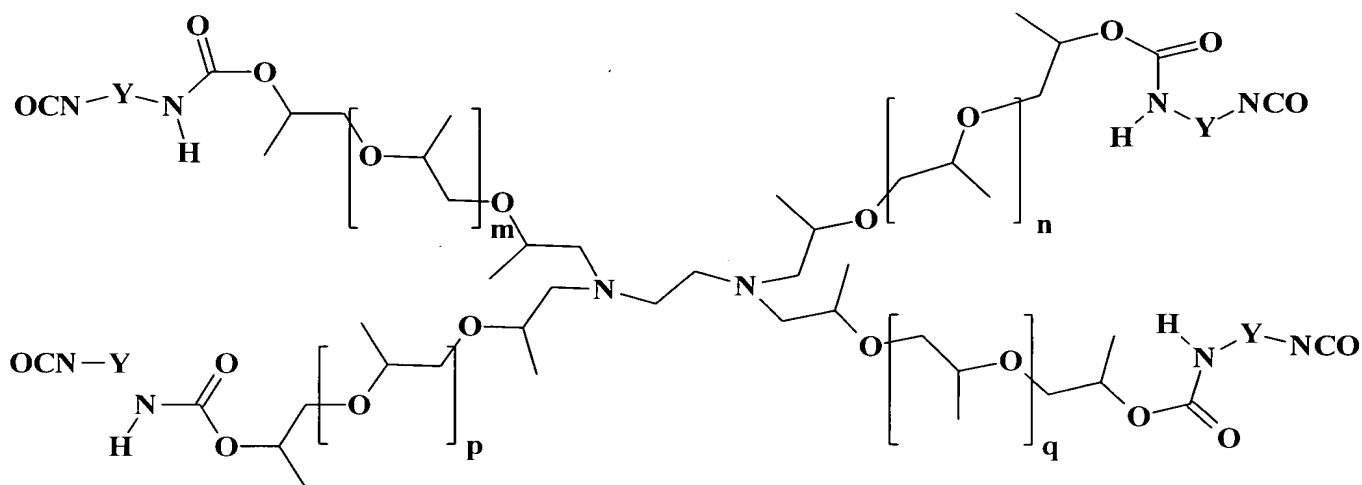


As can be seen in the above discussion, the oxirane compound is reacted directly with the aspartate intermediate. No such reaction occurs in the cited patents. None of the cited patents describe reacting an alkylene oxide (or any other oxirane such as cycloalkylene oxides or phenylglycidyl ether, as recited in Claim 2) directly with an aspartate, nor is this reaction inherently occurring in the process/composition described in these patents.

Using Wicks as an example of the reaction chemistry occurring in all three patents, Wicks describes that the preferred polyether-polyisocyanate adducts are prepared from an amine started polypropylene oxide tetraol with a molecular weight of 1000 to 5000. The following uses ethylene diamine as the starter diamine, where  $m + n + p + q = \sim 10$  to 80:

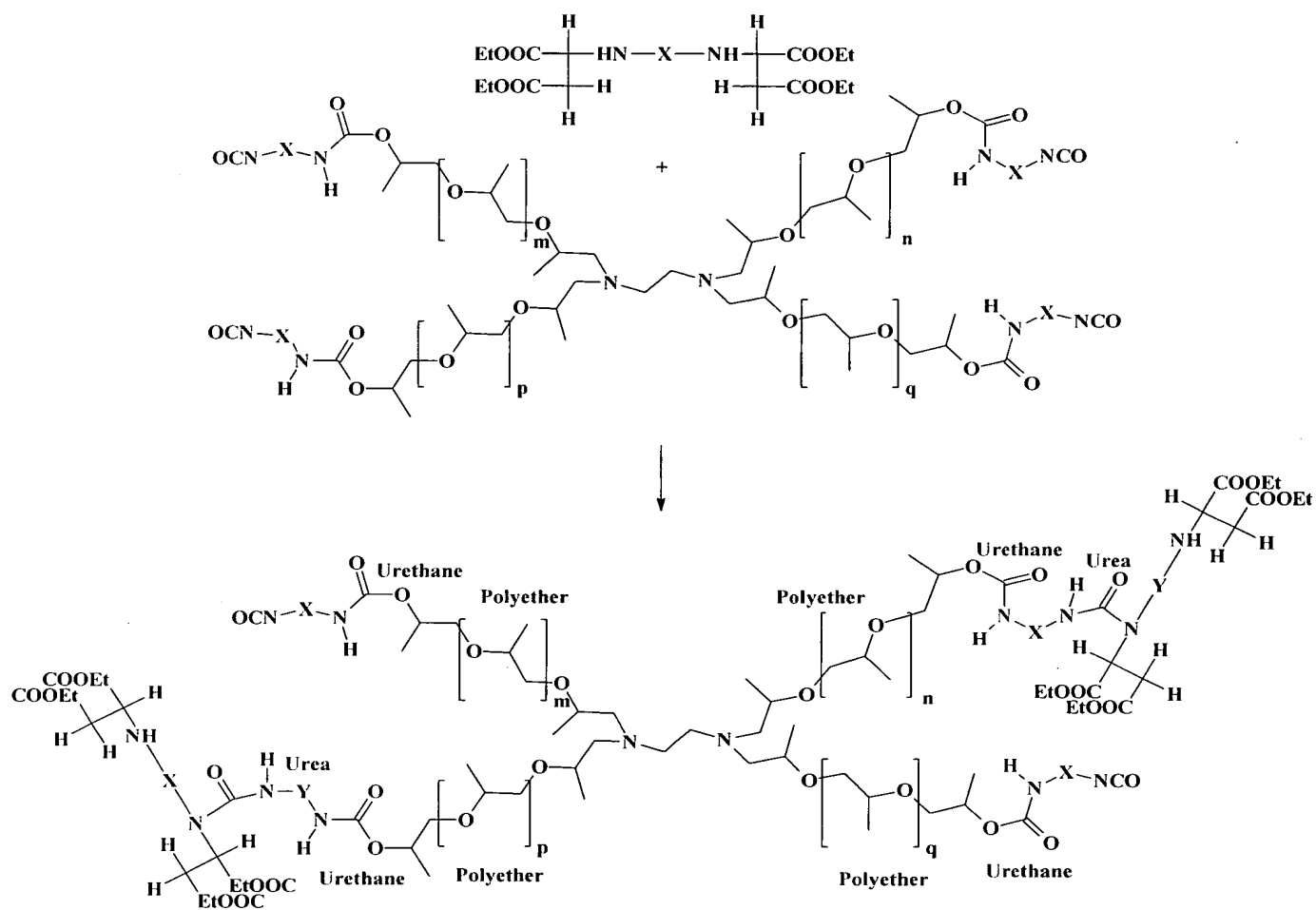


The polyether tetraol is reacted with a diisocyanate, for example, hexamethylene diisocyanate to prepare the prepolymer [Y = (CH<sub>2</sub>)<sub>6</sub>]:



This prepolymer is then reacted with a diispartate to give a polyether-urethane-urea:





Of course, the isocyanate will continue to react with secondary amine to give the crosslinked network. The crosslinked network will consist of urethane, urea and polyether bonds.

As can be seen from the above example, the compounds of Claim 1 cannot be formed from the reactants used in any of the cited patents, and thus the compounds of Claim 1 are not inherent in the prior art; they are novel and nonobvious. Additionally, there is absolutely no teaching or suggestion in the cited patents of a process of preparing the claimed compounds, as recited in Claim 2: reacting an oxirane compound, for example an alkylene oxide, with an aspartate to arrive the compounds of Claim 1. The reactants used in the cited patents are not "mixed in any sequence", as asserted in the Final Office Action. All three patents show preparation of the aspartate, which is then mixed with a polyisocyanate which can be prepared from a prepolymer, as described above. Appellants respectfully submit that the compounds shown in Claim 1, the process of making the compounds as recited in Claim 2, and depending Claims 3-4 are not obvious in view of the cited references and request withdrawal of the §103 rejection.

Appellants would like to point out to the Board that a related application, Application Serial No. 10/678,491, claims novel aspartates that are prepared by reacting mono or polyamines corresponding to formula (II)

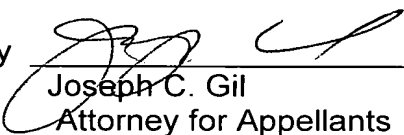


with compounds corresponding to formula (III):  $R_3OOC-C(R_1)=C(R_2)-COOR_4$  and reacting the resultant product with caprolactone, ethylene carbonate or propylene carbonate. The claims of this application were rejected on the same prior art and are now allowed. The Examiner takes an inconsistent position in the present application, in view of the allowance of the claims in the related application.

**CONCLUSION**

Appellants respectfully submit that all pending claims, Claims 1- 4, are patentable and that the present application is in condition for allowance; such action is respectfully requested at an early date.

Respectfully submitted,

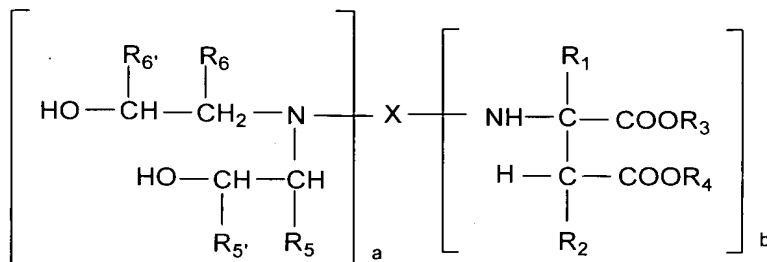
By   
Joseph C. Gil  
Attorney for Appellants  
Reg. No. 26,602

Bayer MaterialScience LLC  
100 Bayer Road  
Pittsburgh, Pennsylvania 15205-9741  
PHONE: (412) 777-3813  
FACSIMILE PHONE NUMBER:  
412-777-3902

f:\shared\kpl\da90.appb

## CLAIM APPENDIX

1. An aspartate of the formula:



where

X represents an m-valent organic residue obtained by removing the primary amino group or groups from a mono or polyamine which has (cyclo)aliphatically bound amino groups and a number average molecular weight of 60 to 6000, and which may contain further functional groups that either are reactive with isocyanate groups or are inert to isocyanate groups at temperatures of up to 100°C,

R<sub>1</sub> and R<sub>2</sub> may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>3</sub> and R<sub>4</sub> may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>5</sub> represents hydrogen or together with R<sub>5'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>5'</sub> represents a moiety selected from the group consisting of  
i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,

ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub> cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,

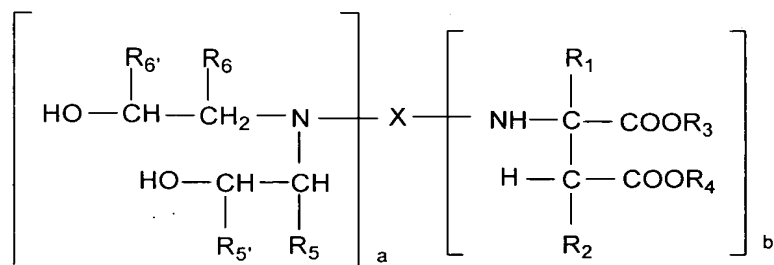
R<sub>6</sub> represents hydrogen or together with R<sub>6'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>6'</sub> represents a moiety selected from the group consisting of  
 i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
 ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub> cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,

with the proviso that R<sub>5</sub> and R<sub>6</sub> are the same and R<sub>5'</sub> and R<sub>6'</sub> are the same, and

a and b represent integers of from 1 to 5, provided that the sum of a and b is from 2 to 6.

2. A process for preparing an asparatate of the formula:



where

X represents an m-valent organic residue obtained by removing the primary amino group or groups from a mono or polyamine which has (cyclo)aliphatically bound amino groups and a number average

molecular weight of 60 to 6000, and which may contain further functional groups that either are reactive with isocyanate groups or are inert to isocyanate groups at temperatures of up to 100°C,

R<sub>1</sub> and R<sub>2</sub> may be identical or different and represent hydrogen or organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>3</sub> and R<sub>4</sub> may be identical or different and represent organic groups which are inert towards isocyanate groups at a temperature of 100°C or less,

R<sub>5</sub> represents hydrogen or together with R<sub>5'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>5'</sub> represents a moiety selected from the group consisting of  
i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub> cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,

R<sub>6</sub> represents hydrogen or together with R<sub>6'</sub> and the carbon atoms to which they are connected forms a six-membered cycloalkyl group, with said cycloalkyl group being substituted with from 0 to 3 alkyl groups having from 1 to 3 carbon atoms,

R<sub>6'</sub> represents a moiety selected from the group consisting of  
i) C<sub>1</sub> to C<sub>8</sub> alkyl groups which may be interrupted with an oxygen atom,  
ii) C<sub>6</sub> to C<sub>10</sub> aryl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms and iii) C<sub>6</sub> to C<sub>12</sub>

cycloalkyl groups, which may be substituted with up to three alkyl groups having from 1 to 3 carbon atoms,  
with the proviso that  $R_5$  and  $R_6$  are the same and  $R_{5'}$  and  $R_{6'}$  are the same,  
and

a and b represent integers of from 1 to 5, provided that the sum of a and b is from 2 to 6, comprising

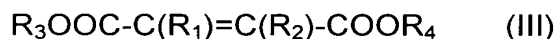
A) reacting at a temperature of 0 to 100°C, in solution or in the absence of a solvent and at an equivalent ratio of primary amino groups in component a) to C=C double bonds in component b) of from about 1.1:1 to about 3.0:1

a) mono or polyamines corresponding to formula (II)



with

b) compounds corresponding to formula (III)



wherein

X,  $R_1$ ,  $R_2$ ,  $R_3$  and  $R_4$  are as defined above and  
m represents an integer of from 2 to 6, and

B) reacting the resultant product with an oxirane compound selected from the group consisting of alkylene oxides, cycloalkylene oxides, and phenylglycidyl ether.

3. A two-component coating composition which comprises, as binder,

a) a polyisocyanate component and

b) an isocyanate-reactive component containing

b1) the aspartate of Claim 1.

b2) optionally other isocyanate-reactive compounds,

wherein the equivalent ratio of isocyanate groups to isocyanate-reactive groups is from about 0.8:1 to about 2.0:1.

4. A prepolymer containing urea, urethane, allophanate and/or biuret structures comprising the reaction product of a polyisocyanate with the aspartate of Claim 1.



**EVIDENCE APPENDIX**

None.

**RELATED PROCEEDINGS APPENDIX**

None.